

REMARKS

In the Office Action dated May 30, 2007, claim 1 was provisionally rejected under the doctrine of obviousness-type double patenting as being unpatentable over claim 8 of copending application Serial No. 10/721,936, in view of an article by Herrington. Claim 2 was provisionally rejected under the doctrine of obviousness-type double patenting as being unpatentable over claim 4 of copending application Serial No. 10/721,936, in view of the article by Herrington.

These rejections are respectfully traversed for the following reasons.

First and foremost, Applicants submit that a double patenting rejection must be strictly based on a comparison of the *claims* of a pending application with (and only with) the *claims* of a copending application or an issued patent owned by the same entity. Applicants submit it is impermissible to introduce a further reference, for constructing a combination with the claims of the commonly-owned copending application or patent.

The Federal Circuit has stated many times that the basic issue involved in an obviousness-type double patenting rejection is whether any claim of the application in question defines merely an obvious variation of an invention in a copending application or patent, and in doing so the disclosure of the copending application or patent cannot be used as prior art. *In re Kaplan*, 789 F.2d 1574, 1579 (Fed. Cir. 1986). As stated in *Geneva Pharmaceuticals, Inc. v. GlaxoSmithKline PLC*, 349 F.3rd, 1373, 1385 (Fed. Cir. 2003):

Because non-statutory double patenting compares earlier and later claims, an earlier patent's disclosure is not available to show non-statutory double patenting.

Consistently, in *Ortho Pharmaceutical Corp. v. Smith*, 959 F.2d 936, 943 (Fed. Cir. 1992), the Federal Circuit stated:

It is the claims, not the specification, that define an invention... . And it is the claims that are compared when assessing double patenting.

In *General Foods Corp. v. Studiengesellschaft Köhle mbH*, 972 F.2d 1272 (Fed. Cir. 1992), the Federal Circuit stated:

[C]omparison can be made only with what invention is *claimed* in the earlier patent, paying careful attention to the rules of claim interpretation to determine what invention a claimed *defines* and not looking to the claim for anything that happens to be mentioned in it as though it were a prior art reference... .Our precedent makes clear that the *disclosure* of a patent cited in support of a double patenting rejection cannot be used as though it were prior art, *even where the disclosure is found in the claims*. (emphases in original)

If the disclosure of the commonly-owned patent or copending application cannot be used to substantiate a non-statutory double patenting rejection, it should be even more clear that the disclosure of *another document* cannot be used for a similar purpose. It would be meaningless to preclude reliance on the disclosure on the commonly-owned patent or application if the disclosure of another document could simply be used instead. The preclusion of using the disclosure of the commonly-owned application nor patent is, as noted above, due to the fact that a double patenting rejection must be a comparison of claims against claims. Introducing the disclosure of yet another document in the context of such a rejection is completely at odds with the fundamental basis for a double patenting rejection.

If the Examiner believes that a basis exists to justify reliance on such an additional reference in the context of a double patenting rejection, the Examiner is

requested to cite statutory authority or judicial authority for that purpose. In the absence of such a citation, Applicants respectfully submit the Examiner has no authority to formulate the non-statutory double patenting rejection by relying on a reference in addition to the claims of the commonly-owned patent or application.

Secondly, Applicants submit the Examiner has erred in “parsing” the claims in question by identifying steps that are present in both claim 1 of the present application and claim 1 of copending application Serial No. 10/721,936, and then contending that it would have been obvious to combine those steps with the step of filtering the second volume data set to filter out structures that are not of interest. This argument on the part of the Applicants apply regardless of whether the Examiner relies on a separate reference, such as the Herrington article, or simply knowledge allegedly possessed by those of ordinary skill in the relevant technology. In a similar situation in the aforementioned *General Foods Corp.* case, the District Court had substantiated an obviousness-type double patenting rejection by identifying a number of steps in a patent claim in question, and then concluding that further steps in the same claim would have been obvious in view of the initial steps. This approach was reversed by the Federal Circuit, which stated as follows:

[T]he principle error into which the trial court was led... resides in a complete misinterpretation of claim 1... of the '619 patent on the caffeine recovery process, now expired.... . The gist of [the District Court's ultimate error] is that claim 1 of patent '639 in suit is “obvious from claim 1(a)” of patent '619. Of course, there is no such thing as “claim 1(a)” There is a claim 1 and the *first step* of its 9 recited steps is designated “(a).” And that step recites the essence of the very same process described in the '639 patent in suit but, in accordance with the principles of claim instruction...step (a) is not “claimed” *step (a) is not “claimed”* in the '619 patent, nor is it “patented” or “covered” as the trial court seems to have thought it

was... . What is patented by claim 1 of '619 is a *9-step caffeine recovery process*, nothing more and nothing less.

A further error of the trial court in dealing with the '619 patent's claim 1 was in looking, *not* at what invention it *defines*, but at whatever the claim *discloses*... .

The court failed to observe the distinction between a claim as a written disclosure and a claim as a definition of an invention. (emphases in original)

In view of all of the above, the fact that the Examiner has acknowledged that claim 1 of copending application Serial No. 10/721,936 does not include, as explicit claim language, filtering the second volume data set to filter out structures not of interest is, by itself, sufficient to preclude a double patenting rejection. The fact that the Examiner has felt it necessary to rely on an extraneous reference to provide such a teaching is further substantiation of the impropriety of such a double patenting rejection, rather than a proper basis for substantiating such a rejection.

The same arguments apply to the double patenting rejection of claim 2, which embodies all of the subject matter of claim 1 therein.

Withdrawal of these double patenting rejections is therefore respectfully requested.

Additionally, claims 1-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over Crook in view of Herrington. Claims 4-6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Crook in view of Herrington, further in view of Essinger.

These rejections are respectfully traversed as well, for the following reasons.

Claim 1 in the form at the time the Office Action was rendered included the step of transforming the volume dataset and the segmented surface to transform the

segmented curve surface into a plane, and also included the step of representing the transformed curved surface of the three-dimensional image with a slice of a predetermined thickness. These steps have been amended to make clear that the transformation of the volume dataset and the segmented surface take place by computationally uncurving and flattening the segmented curve surface into a plane. Thus, the volume dataset and the segmented surface are virtually “unrolled” so as to be represented as a plane. An example of the transformed segmented curved surface into a plane is shown in Fig. 5 of the application. At a minimum, this plane need only be composed of one layer of voxels but, as described in the paragraph bridging pages 10 and 11 of the present specification, the display of the plane has a slice of a selected thickness may include, depending on the particular diagnostic problem, a slice above and/or below the segmented surface that has been transformed into a plane, hence a planar slice of a predetermined thickness that is coplanar with the aforementioned plane.

The Examiner has relied on Figures 8 and 9 of the Crook reference as corresponding to the aforementioned step of transforming the volume dataset and the segmented surface into a plane. Applicant submits, however, that the highly schematic illustrations shown in Figures 8 and 9 do not represent a transformation of the *surface* (i.e. the surface of the femur 84 in the example of Crook). In the Crook reference, despite the division into voxels and the subsequent conversion of one surface of each voxel into the representation shown in Fig. 9, the actual surface always remains curved. The graphical representation shown in Figure 9 is not intended to be a representation of the actual surface of the femur 84, but is merely

an intermediate step in the generation of data that will then be supplied to a CAD program in order to produce the representation shown in Fig. 10.

The surface composed of joined planar portions shown in Fig. 9 of Crook et al, therefore, represents only a *portion* of the total data that are needed to represent the curved surface, the remaining portion being the vector information that is then used in combination with the extracted surface shown in Fig. 9 to produce the CAD representation shown in Fig. 10. Moreover, the representation shown in Fig. 90 is merely an illustration of an intermediate organization of data in the procedure that leads to the CAD surface shown in Fig. 10, and the representation shown in Fig. 9 is not itself displayed at any time during the computation, since it would serve no purpose in doing so.

Therefore, the representation shown in Fig. 9 of the Crook reference does not constitute a “computationally uncurved and flattened” (i.e. “unrolled”) representation of the segmented curved surface into a plane.

Therefore, regardless of the teachings of the Herrington reference, the Crook reference does not disclose the “segmenting” and “transforming” and “producing a third volume data set” steps of claim 1. Therefore, regardless of the teachings of the Herrington article, modifying the Crook reference in accordance with the teachings of Herrington would not result in the subject matter of any of claims 1-3.

Moreover, Applicants do not agree with the Examiner’s conclusions regarding the teachings of the Herrington article. The Herrington article discloses, in Figures 3 and 4 and in the associated description, an automatic radial filtering. The purpose of filtering in the subject matter disclosed and claimed in the present application, based on the expected distance from the surface of structures that are of no interest, is to

limit such filtering to a predefined area of interest, as described in the present specification at page 5, lines 9-21. This is in contrast to the statements made by the Examiner in the portion of the carry-over paragraph at the top of page 7 of the Office Action. According to the statements of the Examiner, every bone would be detected, not only bones that are located in the area of interest.

The above arguments are equally applicable to the rejection of claims 4-6 under 35 U.S.C. §103(a) based on Cook and Herrington, further in view of Essinger. For the reasons discussed above, even if the Examiner's conclusions regarding the teachings of the Essinger reference are correct, modifying the Crook/Herrington combination in accordance with those teachings would not result in the subject matter of any of claims 4-6, all of which embody the subject matter of claim 1 therein.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by,

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